ABSTRACT

Service path protection is provided for packet-based data services (e.g. GbE or FC) by making available to a protected service, as and when needed, preemptable (i.e. sharable) transport bandwidth (e.g. STS-1s for a SONET network) used, under normal conditions, to transport other data services. Each client-based service path is defined by a selectable working path when service protection has not been initiated for that service path and each working path comprises a selectable bandwidth, selectable portions of which are designated as unpreemptable and/or preemptable, whereby the preemptable bandwidth portions are made available for protection preemption by different service paths. A protection path is assigned to each protected service path, whereby each protection path comprises a selectable bandwidth having preemptable bandwidth portion(s) of working path(s) defining different service path(s) and/or unused network bandwidth. In response to a protection switch request the protected service path is switched so that it is defined by the protection path assigned to it, thereby preempting the preemptable bandwidth portion of the protection path for use by the protected service path. The working path bandwidths are selected on a dynamic basis in response to available network bandwidth so as to maximize the use of network bandwidth by the working paths.